

ABSTRACT

Comparison of Inflammatory Response between Platelet Rich Plasma 20% and Autologous Serum 20% in Experimentally-Induced Corneal Alkali Burn

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Objective: to compare the inflammatory response between platelet rich plasma 20% and autologous serum 20% on cornea after sodium hydroxide exposure.

Methods: a true experimental study with two groups post-test design. A total of 18 rabbits were used in this study and allocated into two groups. After collecting intravenous blood samples from both group, platelet rich plasma 20% and autologous serum 20%, respectively, were obtained by centrifugation and dilution. Alkali burns were inflicted on the central cornea of each rabbit's right eye by applying a round filter paper, 7.0 mm in diameter, soaked in 1N NaOH for 60 s. Clinical outcome of the inflammation were observed everyday for seven days. On the seventh day, corneal tissue was collected for histopathological examination to evaluate amount of PMN neutrophils that infiltrate the central cornea. All data were statistically analyzed for difference between the study groups.

Result: statistical analysis shows statistically difference in clinical inflammatory feature of conjunctival hyperemia at day 3 until day 7, in which the group that received PRP 20% got lower conjunctival hyperemia grading compared to the group that received AS 20%. Other clinical features, corneal opacity and epithelial defect, shows no statistically difference between two groups. Histopathological examination shows lower amount of PMN neutrophil infiltration to the central cornea on PRP group, compared to AS group.

Conclusion: Platelet-rich plasma 20% eyedrop can be used as one of adjuvant therapies and has better control of inflammatory response towards alkaline injury of the cornea during acute phase.

Keywords: alkali injury, corneal alkali burn, autologous serum, platelet rich plasma